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EOSDIS Core System Project

Flight Operations Segment (FOS) Release B Version Description Document (VDD) for the ECS Project

Version 2.00.00

October 1997

Hughes Information Technology Systems
Upper Marlboro, Maryland

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Prepared Under Contract NAS5-60000

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Preface

This is a Version Description Document (VDD) which accompanies the delivery of the Earth Observing System (EOS) Flight Operations Segment (FOS) Release B Version 2.00.00 software for the ECS project. It is not a formal deliverable and does not require Government approval. However, the preliminary VDD is released through the FOS Change Control Board (CCB). The final document shall be placed under configuration control and released by the EOSDIS Core System (ECS) CCB. Changes to this document shall be made by document change notice (DCN) or by complete revision.

Both the preliminary and final VDD documents shall be submitted to the Data Management Office (DMO) for processing and posting. Any questions regarding distribution should be addressed to:

Data Management Office
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Hughes Information Technology Systems
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Upper Marlboro, MD 20774

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Abstract

This document describes the delivery contents of the FOS components including commercial off-the-shelf (COTS) software and Version 2.00.00 of Custom FOS software, and accompanying documentation.

The purpose of this document is to describe the contents of the FOS delivery. It briefly describes the capabilities of the product, provides an inventory of the delivery, addresses unresolved and fixed problems, and addresses issues such as special operating instructions, and disclaimer notices for public domain software used in the product.

Keywords: CCB, CSR, deliver, EOC, ECL, description, instructions, inventory, FOT, FOS, manual, NCR, operations, problems, release, RRR, software, tools, user's, version, 1ST

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Document Number	**Status/Issue**	**Publication Date**	**CCR Number**
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1. Introduction

1.1 Identification of Document

This is a Version Description Document (VDD) prepared using NASA-STD-2100-91 (NASA-DID-P500, NASA form DD250) as a guide. It is submitted as part of Flight Operations Segment (FOS) delivery for the Earth Observing System Data and Information System (EOSDIS) Core System (ECS), contract number NAS5-60000.

1.2 Scope of Document

This document describes the contents of the FOS Release B Version 2.00.00 software delivery including any new or modified COTS, custom FOS ECS software, and accompanying documentation.

1.3 Purpose and Objectives of Document

The purpose of this document is to describe the contents of the FOS delivery. It briefly describes the capabilities of the product, provides an inventory of the delivery, lists unresolved problems, and addresses issues such as special operating instructions, system limitations, and disclaimer notices for public domain software used in the product.

1.4 Document Status and Schedule

The preliminary version of the VDD was used for Acceptance Testing of Release B for FOS.

This VDD is submitted as a final document. It is scheduled for delivery thirty days after the Release Readiness Review (RRR). Any changes to the product that require a subsequent version of this document to be released will be described in a new VDD.

1.5 Document Organization

The format and contents of this document comply with NASA-DID-P500 and NASA-DID-999 as defined in NASA-STD-2100-91.

- Introduction — Introduces the VDD scope, purpose, objectives, status, schedule and document organization.
- Related Documentation — Provides a bibliography of reference documents for the VDD organized by parent and binding subsections.
- Product Description — Describes the general capabilities and product contents.
- Inventory — Lists product inventory including COTS and custom FOS software (contents of tar file) as appropriate.

- Non-conformance Status — Discusses known problems with the FOS software that are fixed with this delivery.
- Appendices — Contain supplemental information such as: build and installation instructions, problem reporting, and public software disclaimer notices.
- Abbreviations and Acronyms — Contains an alphabetized list of the definitions for abbreviations and acronyms used in this volume.

2. Related Documentation

2.1 Parent Document

The parent documents are the documents from which the scope and content of this document is derived.

423-42-01	EOSDIS Core System Statement of Work - CN10
423-41-02	Goddard Space Flight Center, Functional and Performance Requirements Specification for the Earth Observing System Data and Information System (EOSDIS) Core System (ECS)
NASA-STD-2100-91	NASA Software Documentation Standard, Software Engineering Program

2.2 Applicable Documents

The following documents are referenced within this document, or are directly applicable, or contain policies or other directive matters that are binding upon the content of this volume.

194-207-SE1-001	System Design Specification for the ECS Project
304-CD-001-003	Flight Operations Segment (FOS) Requirement Specified for the ECS Project, Volume 1: General Requirements
305-CD-040-002	Flight Operations Segment (FOS) Release B Design Specification for the ECS Project (Segment Level Volume)
307-CD-001-003 329-CD-001-003	Flight Operations Segment (FOS) Release Plan and Development Plan for the ECS Project
709-CD-003-001	FOS Release B Test Readiness Review Presentation Package

2.3 Information Documents

The following documents are referenced herein and, amplify or clarify the information presented in this document. These documents are not binding on the content of the Version Description Document.

222-TP-003-008	Release Plan Content Description for the ECS Project
360-TP-001-002	Flight Operation Segment (FOS) Commercial-off-the-Shelf (COTS) Hardware for Release B
604-CD-001-004	Operations Concept for the ECS Project: Part 1: - ECS Overview
604-CD-004-001	ECS Operations Concept for the ECS Project: Part 2, FOS

609-CD-005-001	Flight Operations Segment (FOS) Operations Tool Manual
SD-1-014	Software Nonconformance Reporting Project Instruction

3. Product Description

This section describes the product capabilities of the FOS ECS software.

3.1 Product Description and General Capabilities

FOS is responsible for mission operations, including the planning, scheduling, commanding, and monitoring of US EOS spacecraft and US EOS instruments onboard the US and International Partner (IP) series of spacecraft. FOS is composed of the EOS Operations Center (EOC) located at Goddard Space Flight Center (GSFC) and Instrument Support Toolkit (IST) associated with the Principal Investigations (PIs) and Team Leaders (TLs).

FOS Release B capabilities include:

- Expanded system based on Release A capabilities
- Additional Management and Communication Services

For more detailed information on Release B capabilities refer to ***FOS Release B Test Readiness Review Presentation Package*** (709-CD-003-001). The following sections describe the product general capabilities in further detail.

Nine subsystems have been defined to support flight operations. Individually these subsystems perform specific, unique functions; collectively, they provide a set of interrelated services for the Flight Operations Team (FOT) and the IST user community. These subsystems are:

1. Analysis Subsystem (ANA)
2. Command Subsystem (CMD)
3. Command Management Subsystem (CMS)
4. Data Management Subsystem (DMS)
5. FOS User Interface Subsystem (FUI)
6. Planning and Scheduling Subsystem (PAS)
7. Real-Time Contact Management Subsystem (RCM)
8. Resource Management Subsystem (RMS)
9. Telemetry Subsystem (TLM)

3.1.1 Analysis Subsystem (ANA)

The ANA subsystem provides statistics generation, User Supplied Algorithm processing, a Decision Support System (DSS), Routine Request Processing, Carryout Data, and Clock Correlation Process. The ANA subsystem is responsible for managing the on-board systems and for the overall mission monitoring. Its functions include performance analysis and trend analysis. It also cooperates with Telemetry to support fault detection and isolation.

3.1.2 Command Subsystem (CMD)

The CMD subsystem consists of three processes: Format Command, Frame Operation Procedure (FOP) Command, and Transmit Command. Format Command receives and validates command directives. FOP Command builds command link transmission units (CLTUs) according to the Consultative Committee for Space Data Systems (CCSDS) standard. Transmit command forwards the CLTUs at a specified uplink rate. CMS is responsible for transmitting command data (i.e., Real-Time commands or command loads) to EDOS for uplink to the spacecraft during each real-time contact. Command data can be received in real-time by the operational staff or as preplanned command groups generated by Command Management. The CMD subsystem is also responsible for verifying command execution on-board the spacecraft.

3.1.3 Command Management Subsystem (CMS)

The CMS subsystem contributes a Schedule Controller process, a Command Model process, a Spacecraft Model process, a Ground Schedule process, and a Load Catalog process. CMS manages the preplanned command data for the spacecraft and instruments. Based on inputs received from Planning and Scheduling, Command Management collects and validates the commands, software memory loads, tables loads, and instrument memory loads necessary to implement the instrument and spacecraft scheduled activities.

3.1.4 Data Management Subsystem (DMS)

This subsystem provides the Project Data Base Management processes, Event Processing, Telemetry Archive Process, Ground Telemetry Archive Process, and External Interface Processes. DMS is responsible for maintaining and updating the Project Data Base (PDB) and the FOS history log.

3.1.5 FOS User Interface Subsystem (FUI)

This provides graphical user interface services for all of the FOS subsystems. FUI provides character-based and graphical display interfaces for FOS operators interacting with all of the aforementioned FOS subsystems.

3.1.6 Planning and Scheduling (PAS)

This produces a conflict-free schedule of activities for spacecraft resources. PAS integrates plans and schedules for spacecraft, instruments, and ground operations. Planning and Scheduling provides the operational staff with a common set of capabilities to perform "what-if" analyses and to visualize plans and schedules.

3.1.7 Real-Time Contact Management Subsystem (RCM)

This receives and processes messages from NCC during contact. It also sends request messages to NCC during contact. Status messages are also received and processed from EDOS during contact. RCM is responsible for managing the real-time interface with the NCC and EDOS, as well as with the DSN station, as applicable.

3.1.8 Resource Management Subsystem (RMS)

This provides multiple operators access to the same data stream. It also ensures a single point of command for a specific spacecraft. RMS provides the capability to manage and monitor the configuration of the EOC. This includes configuring the EOC resources for multi-mission support; facilitating operational failure recovery during real-time contacts.

3.1.9 Telemetry Subsystem (TLM)

This provides telemetry decommutation. It also provides for memory dump and spacecraft state checks. TLM receives and processes housekeeping telemetry (in CCSDS packets) from EDOS. After the packet decommutation, the telemetry data is converted to engineering units and checked against boundary limits.

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4. Product Inventory

Delivery of FOS generally consists of commercial-off-the shelf (COTS) software, shareware software and custom ECS software. This section provides details of these components.

4.1 Inventory of Materials

4.1.1 Documentation

The following document is being provided with this VDD:

360-TP-001-002 Flight Operation Segment (FOS) Commercial-off-the-Shelf (COTS) Hardware for Release B

4.1.2 Archive Tapes

The following magnetic tapes are used to archive the delivered baseline configuration of the developed software.

904-PR-049-001
Tape label:EXE_FOSBv2.00.00
Distribution Date: 092597
>>> 5.0gbyte format (high density) <<<
Filenames:
ECS_COPYRIGHT_Hughes.asc
INT_B_P11-eoc-cnfig-scripts.tar2
INT_B_P11_DECexe.tar.
INT_B_P11_SUNexe.tar.Z
README.txt

904-PR-050-001
Tape label:SRC_FOSBv2.00.00
Distribution Date: 092597
>>> 5.0gbyte format (high density) <<<
Filenames:
ECS_COPYRIGHT_Hughes.asc
INTB_P11_src.tar.Z
Files in the .Z format are:
ana.tar
cmd.tar
cms.tar
dms.tar
foscommon.tar
fui.tar
pas.tar
rcm.tar
rms.tar
tlm.tar

4.1.3 Utility and Support Software

This software is not a part of the version software, but is required by the FOS environment at GSFC.

Software: DNS Server Tables

Description: The machines designated as DNS master/slaves at the EOC have files in here which contain the DNS tables used for hostname/IP address resolution. Panda (Ops) and kodiaks (Support) are the two DNS master servers for the EOC

Location: host - giraffe, path - */var/named/**

host - panda, path - */var/named/**

host - kodiak, path - */var/named/**

Software: switchlan

Description: Used by some of the workstations to move the necessary configuration files to allow the workstations between the Operational and Support LANs

path - /bin/switchlan

Software: backup directory

Location: /usr/backup/*

Description: Some of the fileservers and workstations have a /usr/backup directory which contain backup scripts used to perform various backups of the system to tape or disk.

4.1.4 COTS Software Inventory

Table 4-1 summarizes the deployed COTS software at GSFC. The physical mapping of software to a specific hardware platform can be accomplished by using “Class” (column header) as a cross-reference between tables. The information under Class is grouped by hardware type and vendor (e.g., Servers, DEC). When the hardware has a unique software configuration, an additional category (host name) is also provided (e.g., DEC File Servers, DEC, cheetah). For actual hardware names (or aliases) *see* Table 4-3.

Due to the number of the Solaris patches, table 4-1a was created as a subset of table 4-1 to display the Solaris patch list.

4.1.5 Shareware Inventory

Table 4-2 summarizes the deployed Shareware at GSFC EOC. Refer to section 4.1.4 to learn how the physical mapping of software to hardware is accomplished.

Table 4-1. FOS COTS Software Inventory List

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
Servers						
DEC [Real Time (3), Data (3)]	6	Digital Unix (formerly DEC OSF/1)	3.2d-2		OSF 365-029 OSF 365-350139 OSF 365-350210 OSF 365-350224 OSF 365-350226 OSF 365-350230 OSF 365-350248 SSRT038301 SSRT035901 SSRT037901	DEC
		OSF-SVR				DEC
		OSF-BASE				DEC
		OSF-USR				DEC
		LSM Software Development				DEC
		DMQ-RTO				DEC
		DECNSR-NET-SVR				DEC
		ADVFS-UTILITIES				DEC
		ACAS-RT				DEC
		NET-APP-SUP-200				DEC
(All servers except panther)		X/Motif Executables Libraries	X11	 /usr/bin/X11 /usr/lib/X11		SUN
(panther only)		X/Motif	X11R6	/usr/opt/XR6320/X11R6		SUN

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
		Sybase Server/Client Open Client Library Embedded SQL/C Precomp	10.0.2	/usr/sybase		SYB
		C Compiler	4	/usr/ccs/lib/cmplrs/cc		DEC
(bobcat and panther only)		C++ Compiler (Not baselined for: jaguar, leopard, puma, tiger)	5.1-1	/usr/ccs/lib/cmplrs/cxx		DEC
(bobcat and panther only)		DEC Fuse (Not baselined for: jaguar, leopard, puma, and tiger)	2.1-0	/usr/opt		DEC
		Tivoli Client (Not installed on jaguar, and puma)	3.0	/usr/Tivoli	Service_Pack_01	Tivoli Systems
2) HP (Management)	2	HP-UX	10.10		PHCO-10384 PHNE-10364 PHNE-10902	HP
		CDE (part of the Operating System)	10.10			HP
		X/Motif	X11	/usr/bin/x11		SUN
		English C++ (same as C++ Softbench)	C.05.25	/opt/softbench		HP
		C/ANSI (C Developers'Bundle)	B.10.10.02	/opt/ansic/bin/cc		HP
		C Compiler		/usr/ccs/bin		HP
		HPOV	4.0	usr/ov		HP

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
(polar - MSS server only)		Tivoli Server	3.0	/data/Tivoli	- Service_Pack_01 - 3.0-TMP-0022 - Admin 3.0 Upgrade Package - 3.0 Univeral Monitors - 3.0 SNMP Monitors	Tivoli Systems
		Remedy (Not Installed)	2.1.3			Remedy Corp.
(grizzly - CSS server only)		Tivoli Server	3.0	/data/local/Tivoli	Service_Pack_01	Tivoli Systems
DEC File Servers						
DEC cheetah	3	Digital Unix (formerly DEC OSF/1)	3.2D-2		***Note:*** Patches have not been installed OSF 365-029 OSF 365-350139 OSF 365-350210 OSF 365-350224 OSF 365-350226 OSF 365-350230	DEC
		OSF-SVR				DEC
		OSF-BASE				DEC
		OSF-USR				DEC
		LSM-OA (Logical Storage Manger)				DEC
		DMQ-RTO				DEC
		DECNSR-NET-SVR				DEC
		ADVFS-UTILITIES				DEC

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
		ACAS-RT				DEC
		NET-APP-SUP-200				DEC
		ASE-OA (DECsafe Available Server Environment)	1.3	/opt/ASE130		DEC
		POLYCENTER Advanced File System	1.6	/usr/opt/dxadvfs		DEC
		IDL	4.0.1	/fostools/solaris/rsi/idl-4		Research Systems Inc. (RSI)
		IMSL C	2.0	/fostools/dec/IMSL/dec3.2		Visual Numerics
		IMSL C	2.0	/fostools/solaris/IMSL/sun5.5		Visual Numerics
		IMSL C	2.0	/fostools/hp/IMSL/hpux10.10		Visual Numerics
		IMSL C	2.0	/fostools/sgi/IMSL/irix6.2		Visual Numerics
		Microsoft Windows	3.1	/home/wabiuser/wabi		SUN
		Microsoft Office	4.2	/home/wabiuser/wabi		SUN
		Netscape	3.0	/usr/local/solaris		Netscape
		Netscape	3.01	/usr/local/dec		Netscape
		Netscape	3.01	/usr/localhp		Netscape
		Netscape	3.01	/usr/local/sgi		Netscape
		Sybase Server/Client (All platforms)	10.0.2	/home/sybase		SYB
		Tivoli Client	3.0.1	/usr/Tivoli		Tivoli Systems

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
lion (DECsafe for ops)		Digital Unix (formerly DEC OSF/1)	3.2D-2		***Note:*** Patches have not been installed OSF 365-029 OSF 365-350139 OSF 365-350210 OSF 365-350224 OSF 365-350226 OSF 365-350230	DEC
		OSF-SVR				DEC
		OSF-BASE				DEC
		OSF-USR				DEC
		DMQ-RTO				DEC
		DECNSR-NET-SVR				DEC
		LSM-OA (Logical Storage Manger)				DEC
		ADVFS-UTILITIES				DEC
		ACAS-RT				DEC
		NET-APP-SUP-200				DEC
		ASE-OA (DECsafe Available Server Environment)	1.3	/opt/ASE130		DEC
		POLYCENTER Advanced File System	1.6	/usr/opt/dxadvfs		DEC
		* IDL	4.0.1	/fostools/IDL		RSI
		* IMSL C	2.0	/fostools/dec/imsl/dec3.2		Visual Numerics
		* IMSL C	2.0	/fostools/solaris/imsl/sun5.5		Visual Numerics

* This software is used as backup on Lion. It is only mounted if Cheetah goes down.

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
		* IMSL C	2.0	/fostools/hp/imsl/hpux10.10		Visual Numerics
		* IMSL C	2.0	/fostools/sgi/imsl/irix6.2		Visual Numerics
		* Microsoft Windows	3.1	/home/wabiuser/wabi		SUN
		* Microsoft Office	4.2	/home/wabiuser/wabi		SUN
		* Netscape	3.0	/usr/local/solaris/bin		Netscape
		* Netscape	3.01	/usr/local/dec		Netscape
		* Netscape	3.01	/usr/local/hp		Netscape
		* Netscape	3.01	/usr/local/sgi		Netscape
		* Sybase Server/Client (All platforms)	10.0.2	/home/sybase		SYB
		Tivoli Client	3.0.1	/usr/Tivoli		Tivoli Sys.
cougar		Digital Unix (formerly DEC OSF/1)	3.2C		Not available	DEC
		OSF-SVR				DEC
		OSF-BASE				DEC
		OSF-USR				DEC
		LSM-OA (Logical Storage Manger)				DEC
		DMQ-RTO				DEC
		DECNSR-NET-SVR				DEC
		DCE-RT-SVC				DEC
		ADVFS-UTILITIES				DEC
		ACAS-RT				DEC
		JUKEBOX-TIER-1				DEC
		NET-APP-SUP-200				DEC

* This software is used as backup on Lion. It is only mounted if Cheetah goes down.

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
		POLYCENTER Advanced File System	1.6	/usr/opt/dxadvfs		DEC
		IDL	4.0.1	/fostools/solaris/rsi/idl-4		RSI
		IMSL C	2.0	/fostools/dec/solaris/IMSL/dec 3.2		Visual Numerics
		IMSL C	2.0	/fostools/solaris/IMSL/sun5.5		Visual Numerics
		IMSL C	2.0	/fostools/hp/IMSL/hpux10.10		Visual Numerics
		IMSL C	2.0	/fostools/sgi/IMSL/irix6.2		Visual Numerics
		Microsoft Windows	3.1	/home/wabiuser/wabi		SUN
		Microsoft Office	4.2	/home/wabiuser/wabi		SUN
		Netscape (for the SUN)	3.0	/usr/local/solaris/bin		Netscape
		Sybase Server/Client (All platforms)	10.0.2	/home/sybase		SYB
		Tivoli Client (NOT INSTALLED)	3.0			Tivoli Systems
Console Managers						
DEC (brown)	2	Digital Unix (formerly DEC OSF/1)	3.2C		Patches not required	DEC
		BOOKBROWSER				DEC
		OSF-BASE				DEC
		OSF-USR				DEC
		Network Application Support-150				DEC
		Open 3D				DEC
		Multimedia Services (MMS-RT)				DEC

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
		Motif	X11	/usr/bin/X11		SUN
		POLYCENTER Console Manager	1.6-100	/usr/opt/DCR160/bin/OSF		DEC
		C Compiler (part of OS)	4	/usr/ccs/bin		DEC
(black)		Digital Unix (formerly DEC OSF/1)	3.2		Patches not required	DEC
		DMQ-RTO				DEC
		DCE-RT-SVC				
		ACAS-RT				
		OSF-BASE				DEC
		OSF-USR				DEC
		Network Application Support-150				DEC
		Open 3D				DEC
		Multimedia Services (MMS-RT)				DEC
		Motif	X11	/usr/bin/X11		SUN
		POLYCENTER Console Manager	1.6-100	/usr/opt/DCR160/bin/OSF		DEC
		C Compiler	4	/usr/ccs/bin		DEC
FOT User Stations						
Sun Ultra 1	31	Solaris (SunOS)	2.5.1(5.5.1)		*see* Table 4.1a	SUN
		Solaris AnswerBook (part of the OS)	3.5.1	/opt/SUNWabe		SUN
		X/Motif	1.2.2	/opt/SUNWmotif		SUN
		C Compiler AnswerBook	4.0	/opt/SUNWspro		SUN
		C++ Compiler AnswerBook	4.1	/opt/SUNWspro		SUN
		JetAdmin	D.01.09	/opt/hpnp		HP

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
		SparcWorks/ProWorks	3.1	/opt/SUNWspro		SUN
		SparcWorks/Visual	1.1	/opt/SUNWspro		SUN
		Tivoli Client (Not installed on: rattles, flys, beetles, trouts, barracudas, stingrays, toronto, flounders, salmons, marlins, pikes, perchs, boas, cobras)	3.0.1	/data/Tivoli		Tivoli Sys.
giraffe(s)		Solaris (SunOS)	2.5.1(5.5.1)		*see* Table 4.1a	SUN
		Solaris AnswerBook (part of the Operating System)	3.5.1			SUN
		X/Motif	1.2.2	/opt/SUNWmotif		SUN
		C Compiler AnswerBook	4.0	/opt/SUNWspro		SUN
		C++ Compiler AnswerBook	4.1	/opt/SUNWspro		SUN
		JetAdmin	D.01.09	/opt/hpnp		HP
		SparcWorks/ProWorks	3.1	/opt/SUNWspro		SUN
		SparcWorks/Visual	1.1	/opt/SUNWspro		SUN
		Tivoli Client	3.0.1	/data/Tivoli		Tivoli Systems
		XRP II (License problem, not functional)	3.0	opt/xrpII-v3.0		HTG Corp
		RTWorks	3.5	/data/rtworks35		Talarian
toronto		Solaris (SunOS)	2.5.1(5.5.1)		*see* Table 4.1a	SUN
		Solaris AnswerBook (part of the Operating System)	3.5.1	/opt/SUNWabe		SUN
		X/Motif	1.2.2	/opt/SUNWmotif		SUN
		C Compiler AnswerBook	4.0	/opt/SUNWspro		SUN
		C++ Compiler AnswerBook	4.1	/opt/SUNWspro		SUN

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
		JetAdmin	D.01.09	/opt/hpnp		HP
		SparcWorks/ProWorks	3.1	/opt/SUNWspro		SUN
		SparcWorks/Visual	1.1	/opt/SUNWspro		SUN
		SUNWabi		/opt		SUN
		Tivoli Client (Not installed)	3.0	/data/Tivoli		SUN
Sun Ultra 2	3	Solaris (SunOS)	2.5.1(5.5.1)		*see* Table 4.1a	SUN
		Solaris AnswerBook (part of the OS)	3.5.1	/opt/SUNWabe		SUN
		X/Motif	1.2.2	/opt/SUNWmotif		SUN
		C Compiler AnswerBook	4.0	/opt/SUNWspro		SUN
		C++ Compiler AnswerBook	4.1	/opt/SUNWspro		SUN
		JetAdmin	D.01.09	/opt/hpnp		HP
		SparcWorks/ProWorks	3.1	/opt/SUNWspro		SUN
		SparcWorks/Visual	1.1	/opt/SUNWspro		SUN
		Tivoli Client	3.0	/data/Tivoli		Tivoli Systems
Sun Sparc 20 kodiak(s)	2	Solaris (SunOS)	2.5.1(5.5.1)		*see* Table 4.1a	SUN
		Solaris AnswerBook (part of the OS)	3.5.1			SUN
		X/Motif	1.2.2	/opt/SUNWmotif		SUN
		C Compiler AnswerBook	4.0	/opt/SUNWspro		SUN
		C++ Compiler AnswerBook	4.1	/opt/SUNWspro		SUN
		JetAdmin	D.01.09	/opt/hpnp		HP
		SparcWorks/ProWorks	3.1	/opt/SUNWspro		SUN
		SparcWorks/Visual	1.1	/opt/SUNWspro		SUN
		Tivoli Client (Not Installed)	3.0	/data/Tivoli		Tivoli Sys.

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
		License Installation Tool (optional pkg installed as part of the OS)	Not available	/etc/opt/licenses		Globetrotter Software
panda		Solaris (SunOS)	2.5.1(5.5.1)		*see* Table 4.1a	SUN
		Solaris AnswerBook (part of the Operating System)	3.5.1			SUN
		X/Motif	1.2.2	/opt/SUNWmotif		SUN
		C Compiler AnswerBook	4.0	/opt/SUNWspro		SUN
		C++ Compiler AnswerBook	4.1	/opt/SUNWspro		SUN
		JetAdmin	D.01.09	/opt/hpnp		HP
		SparcWorks/ProWorks	3.1	/opt/SUNWspro		SUN
		SparcWorks/Visual	1.1	/opt/SUNWspro		SUN
		Tivoli Client	3.0	/data/Tivoli	Service Pack 01 Upgrade Package	
		License Installation Tool (optional pkg installed as part of the OS)	Not available	/etc/opt/licenses		SUN
		Netscape Enterprise Web Server	2.01	/data/ns-home		Netscape
SGI hippo(s)	1	Operating System IRIX	6.2			SGI
		Developer Magic Workshop	2.6.4	/var/inst		SGI
		Tivoli Client	3.0	/usr/Tivoli		Tivoli Sys.
		RapidApp	1.2	/usr/lib/RapidApp		SGI
		Desktop Window Manager	6.2	/usr/bin/X11		SGI
		Indigo Magic Desktop Base	6.2	/usr/lib/desktop		SGI
		CaseVision	2.6.4	/usr/ToolTalk		SGI
		FDDIXPress	6.2	/var/inst		SGI

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
		ViewKit	1.4.0	/var/inst		SGI
		Web access library	1.0	/var/inst		SGI
		C++ Software	7.1 on irix 6.2	/var/inst		SGI
		C Software	6.2	/var/inst		SGI
		Object System (cadmin.sw)	6.2	/usr/Share/catman/u_man/cat 1/cadmin.2		SGI
		IRIX Standard Execution Environment Software	6.2	/var/inst		SGI
		IndigoMagic Desktop	6.2	/var/inst		SGI
		Deskto Tools	6.2	/var/inst		SGI
		IRIS Digial Media Software	6.2	/usr/lib/dmedia		SGI
		DPS/X Software	2.0.5 based on PostScript Level 2	/var/inst		SGI
		IRIS InSight Dynaweb Software	1.01	/usr/share/catman/a-man/cat1/dynaweb.2		SGI
		Fortran 77 (ftn77_eoe.sw)	6.2	/var/inst		SGI
		GoldenGate	1.0	/var/GoldenGate		SGI
		ImageVision	2.5.1	/var/inst		SGI
		ImageVision Tools	2.3	/var/inst		SGI
		IRIS Insight Viewer	2.3.3	/usr/sbin/insight		SGI
		Inventor User Software	2.1.2	/var/inst		SGI
		kernLM	1.1	/var/inst		SGI
		License Tools	2.1	/var/flexlm		SGI
		FLEXlm	4.1	/var/flexlm		SGI
		MediaWarehouse	1.1	/var/inst		SGI
		MediaMail	3.2.3	/var/inst		SGI

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
		Irix IM (Motif)	6.2 based on OSF/Motif 1.2.4	/var/inst		SGI
		Network File system (NFS), 6.2	1.2	/usr/relnotes/nfs		SGI
		PC-NFS Server Component Software	2.0.2	/var/spool/pcnfs		SGI
		Printing Tools	1.4	/usr/lib/Print		SGI
		SGI Tcl	1.1	/usr/bin/sgitcl		SGI
		IRIS Showcase	3.4	/usr.Share		SGI
		Desktop System Administration	6.2	/var/sysadmdesktop		SGI
		Desktop System Monitor	1.2.2	/usr/sbin/sysmon		SGI
		ToolTalk	1.3	/usr/TOOLTALK		SGI
		Indy Video-In	6.2	/var/inst/vino		SGI
		WWW HTTP/1.0 Server	1.4.1A	/var/inst/webserver		SGI
		WebSupport eoe	1.0b3, o32 ABI	var/inst		SGI
		X11 Execution Environment	3.5 based on X11R6	/usr/relnotes/x_eoe		SGI
		File Translators (xlators_3d)	1.1.1	/usr/relnotes/xlators.3d		SGI
DEC hyena(s)	1	Digital Unix (formerly DEC OSF/1)	3.2		Not at patch level	DEC
		DMQ-RTO				DEC
		DECSCHEDULER-EXEC				DEC
		DECNET-OSI-END				DEC
		ADVFS-UTILITIES				DEC
		ACAS-RT				DEC

Table 4-1. FOS COTS Software Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
		FUSE-C-USER				DEC
		FUSE-USER				DEC
		OFS-DEV-USER				DEC
		CXXOSF-USER				DEC
		NET-APP-SUP-250				DEC
		NET-APP-SUP-150				DEC
		OFS-BASE				DEC
		OSF-USR				DEC
		MMS-RT (Multimedia Services-RT)				DEC
		OPEN3D				DEC
		C++	5.5	/usr/bin/cxx		
		Tivoli Client	3.0.1	/usr/Tivoli		Tivoli Sys.
HP zebra(s)	1	HP-UX	10.10			HP
		SAM cumulative patch	B.10.00.00.AA		PHCO_10414	HP
		Patch for EISA 100VG-AnyLan product			PHNE_10075	HP
		100VG-AnyLan/9000 EISA (Utility J2655AA-APX), Addendum to operating system	B.10.10.00			HP
		CDE	B.10.10			HP
		English C++ (same as C++ Softbench)	C.05.25	/opt/softbench		HP
		C Compiler	4	/usr/ccs/bin		HP
		JetAdmin	D.01.08	/opt/hpnp		HP
		Tivoli Client (Not installed)	3.0	/data/Tivoli		Tivoli Sys.

Table 4-1a. Solaris Patch List					
Sun Ultra 1: pikes, marlins, rhino, elephant, boa, viper, trout, steelhead, bass, flys, grouper, rockfish, beetles, perch, barracudas, giraffee, toronto, stingrays, salmons, flounders, python, cobra, tuna, copper					
102934-06	102955-09	103461-10	103558-05	103566-08	103582-02
103591-04	103594-06	103600-05	103603-02	103606-02	103612-07
103630-03	103640-04	103643-03	103663-03	103663-05	103680-01
103686-01	103690-02	103696-01	103699-01	103738-02	103743-01
103770-02	103810-02	103817-01	103821-01	103839-02	103847-01
103857-01	103867-01	103879-04	103891-02	103900-01	103901-03
103903-01	103911-01	103920-05	103928-01	103959-02	104010-01
104029-01	104055-01	104093-02	104162-02	104166-01	104201-01
104208-01	104227-01	104259-02	104277-01	104287-01	104297-01
104406-01	104453-01	104463-01	104509-01		
Sun Ultra 2: bee, hornet, wasp					
102934-06	102955-09	103461-10	103558-05	103566-08	103582-02
103591-04	103594-06	103600-05	103603-02	103606-02	103612-07
103630-03	103640-04	103643-03	103663-03	103663-05	103680-01
103686-01	103690-02	103696-01	103699-01	103738-02	103743-01
103770-02	103810-02	103817-01	103821-01	103839-02	103847-01
103857-01	103867-01	103879-04	103891-02	103900-01	103901-03
103903-01	103911-01	103920-05	103928-01	103959-02	104010-01
104029-01	104055-01	104093-02	104162-02	104166-01	104201-01
104208-01	104227-01	104259-02	104277-01	104287-01	104297-01
104406-01	104453-01	104463-01	104509-01		

Table 4-1a. Solaris Patch List (cont.)					
SPARCstation-20: panda, kodiak					
102934-06	102955-09	103461-10	103558-05	103566-08	103582-02
103591-04	103594-06	103600-05	103603-02	103606-02	103612-07
103630-03	103640-04	103643-03	103663-03	103663-05	103680-01
103686-01	103690-02	103696-01	103699-01	103738-02	103743-01
103770-02	103810-02	103817-01	103821-01	103839-02	103847-01
103857-01	103867-01	103879-04	103891-02	103900-01	103901-03
103903-01	103911-01	103920-05	103928-01	103959-02	104010-01
104029-01	104055-01	104093-02	104162-02	104166-01	104201-01
104208-01	104227-01	104259-02	104277-01	104287-01	104297-01
104406-01	104453-01	104463-01	104509-01		

Table 4-2. FOS Shareware Inventory List

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
DEC File Servers (Shareware locally mounted from SUNs)						
DEC	3	gunzip	1.2.4	/usr/local/solaris/bin		GNU
		gzip	1.2.4	/usr/local/solaris/bin		GNU
		Mosaic - Browser	2.4	/usr/local/solaris/bin		NCSA
		olvwm (Open look-virtual window manager)	12/7/92	/usr/local/solaris/bin		(public domain)
		pine	3.95	/usr/local/solaris/bin		(public domain)
		tcpdump	3.2.1	/usr/local/solaris/bin		(public domain)
		top	3.4beta3	/usr/local/solaris/bin		(public domain)
		unzip	5.12	/usr/local/solaris/bin		(public domain)
		workman	1.3	/usr/local/solaris/bin		(public domain)
		zip	2.0.1	/usr/local/solaris/bin		(public domain)
		traceroute	1.17	/usr/local/solaris/bin		(public domain)

Table 4-2. FOS Shareware Inventory List (cont.)

Class	Qty	Product Description	Version	Path Structure	Patch	Vend/Mfr
		ntpq	3.4x	/usr/local/solaris/bin		(public domain)
		ntpdate		/usr/local/solaris/bin		(public domain)
		tickadj		/usr/local/solaris/bin		(public domain)
		xntpd		/usr/local/solaris/bin		(public domain)
		xntpdc		/usr/local/solaris/bin		(public domain)
		ntptrace		/usr/local/solaris/bin		(public domain)
		Satan	1.1.1	/usr/local/solaris/satan-1.1.1		(public domain)
		perl	5.003	/usr/local/solaris/perl		(public domain)
		Acrobat Reader, acroread	3.0	/usr/local/solaris/Acrobat3		Adobe
		emacs	19.30.1	/usr/local/solaris/FSFemacs		(public domain)
		xv	3.10	/usr/local/solaris/bin		(public domain)
		Crack	5.0a	/usr/local/solaris/crack		(public domain)
Console Manager (black only)						
		emacs	Not verified	/usr/bin		(public domain)
		pixie	Unknown	/usr/bin		(public domain)
Servers (Real Time, Data), DEC File Servers, and Sun User Stations						
		TCPWrappers (Currently installed on the SUN Ultra1, Sun Ultra 2, Sparc 20 only)	1.10	/usr/sbin/tcpd		(public domain)
Sun Ultra 1 (toronto only)						
		dig	Unknown	/opt		(public domain)
		popper	Unknown	/opt/MEqpopper		(public domain)
		WUftpd	Unknown	/opt		(public domain)

Table 4-3. FOS EOC Host Names

Class	Host Name	Alias
Servers		
DEC	tiger(s)	f0svd03
	leopard(s)	f0svd06
	jaguar(s)	f0svd02
	puma(s)	f0svd05
	bobcat(s)	fasvd04
	panther	fasvd01
HP (MSS Server)	polar(s)	famsh01
HP (CSS Server)	grizzly(s)	facsh01
DEC File Server		
	cheetah(s)	f0fsd02
	lion(s)	f0fsd03
	cougar(s)	fafsd01
Console Managers		
	black(s)	fascd01
	brown(s)	fascd02
FOT User Stations		
Sun Sparc20	panda	falss01
Sun Sparc20	kodiak(s)	falss03
Sun Ultra 1	giraffe(s)	f0uss06
Sun Ultra 1	elephant(s)	fauss01
Sun Ultra 1	rhino(s)	fauss02
Sun Ultra 1	gazelle(s)*	f0uss39
Sun Ultra 1	boar(s)*	f0uss40
Sun Ultra1	antelope(s)*	f0uss41
Sun Ultra1	rockfish(s)	f0uss24
Sun Ultra1	grouper(s)	f0uss23
Sun Ultra1	steelhead(s)	f0uss22
Sun Ultra1	trout(s)	f0uss18
Sun Ultra1	tuna(s)	f0uss16
Sun Ultra1	bass(s)	f0uss17
Sun Ultra1	barracuda(s)	f0uss10
Sun Ultra1	stingray(s)	f0uss12
Sun Ultra1	salmon(s)	f0uss13
Sun Ultra1	marlin(s)	f0uss14

Table 4-3 . FOS EOC Host Names (cont.)

Class	Host Name	Alias
Sun Ultra1	flounder(s)	f0uss15
Sun Ultra1	pike(s)	f0uss20
Sun Ultra1	perch(s)	f0uss21
Sun Ultra1	cobra(s)	f0uss25
Sun Ultra1	boa(s)	f0uss26
Sun Ultra1	rattle(s)	fauss27
Sun Ultra1	viper(s)	f0uss29
Sun Ultra1	python(s)	f0uss30
Sun Ultra1	copper(s)	fauss28
Sun Ultra1	fly(s)	f0uss31
Sun Ultra1	beetle(s)	f0uss32
Sun Ultra1	ladybug(s)*	f0uss36
Sun Ultra1	locust(s)*	f0uss37
Sun Ultra1	ant(s)*	f0uss38
Sun Ultra1	toronto	falss02
Sun Ultra2	hornet(s)	f0uss33
Sun Ultra2	wasp(s)	f0uss34
Sun Ultra2	bee(s)	f0uss35
HP	zebra(s)	f0ush03
SGI	hippo(s)	f0usg04
DEC	hyena(s)	f0usd05

* Machines not at the EOC, audit not performed

4.2 FOS Custom Software

FOS custom software consists of a number of components. Ten subsystems are required to make a complete FOS build. The software is available for the following architectures:

- DEC
  OSF 3.2
- SUN
  Solaris 2.5.1 (5.5.1)

A file listing may be generated from the delivered tar file using the tar -tvf command.

4.2.1 FOS Custom Software Version 2.00.00 File Listing

This is a new release of the FOS Custom Software. The software version 2.00.00 contains files generated by the build process and the installation process. The directory listing in Appendix E contains the delivered custom software required to support the EOC operation and is available from the TAR tape. Since, this is new release the specific source code which changed succeeding FOS Release A version 1.02.00 is not identified in a separate listing. Identification of source code changes shall occur for interim releases and patch deliveries.

The executable code for Version 2.00.00 is embedded with the version identifier INT_B_P11. The version identifier uniquely identifies an executable. The version can be extracted by invoking the UNIX command "what". For more information on versioning refer to PI CM-1-030, Software Versioning. The following example displays the output received when the "what" command is invoked.

```
## =================  ECS SOFTWARE  =================
## VERSION:  2.00.00
##  Build date: 08/15/97 @ 10:44:41
## -------------------------------------------------
## C Compiler:
##  cc: SC4.0 18 Oct 1995 C 4.0
## C++ Compiler:
##  CC: SC4.0 18 Oct 1995 C++ 4.1
## -------------------------------------------------
## SunOS muttly 5.5.1 Generic_103640-04 sun4u sparc SUNW,Ultra-2
## -------------------------------------------------
## Config Spec:
## #
## # This view was created for CM Release B Patch 11
## # building starting Wednesday August 06, 1997
## #
## # Please do not edit the config spec for this view it is for CM
## # builds!!!!!
## #
## #
## element * 2.00.00
## element * INT_B_P11
## element * INT_B_P10
## element * INT_B_P9
## element * INT_B_P8
## element * INT_B_P7
## element * INT_B_P6
## element * INT_B_P5
## element * INT_B_P4
## element * INT_B_P3
## element * INT_B_P2
## element * INT_B_P1
## element * BEGIN_INT_B
## -------------------------------------------------
## View:
##  cmFOS_relb11
## -------------------------------------------------
## User:
##  foscm
## =================  ECS SOFTWARE  =================
```

4.2.2 FOS Custom Software Copyright Notice

The archive tape delivered with this document contains a tar file and a copyright file. The name of the copyright file is ECS_COPYRIGHT.asc. The content of the copyright file follows:

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5. Non-Conformance Status

5.1 Non-Conformance Status Overview

This section contains a status report of the problems closed (section 5.2) as of 09/25/97 with this delivery. These problems were found and recorded during development and integration testing and captured in the formal problem tracking system, Distributed Defect Tracking System (DDTS). These NCRs have been reviewed by HITC management and the FOS system is considered to be acceptable for delivery at this time. The status report list the Close NCRs by subsytem and severity. DDTS problem severity definitions, on a 1-3 scale, are defined as follows:

1 Catastrophic bug without workaround that causes total failure or unrecoverable data loss.
Example: system crash or lost user data.

2 Bug that causes failure of noncritical system aspects. There is a reasonably satisfactory workaround, test can continue.
Example: user data must be modified to work.

3 Very minor defect. Workaround exists or the problem can be ignored.
Example: bad layout or misuse of grammar in manual.

5.1.1 Installed Changes

This VDD addresses the additional capabilites of FOS Release B and contains modifications to problems found in the Release A software.

The status of the NCRs corrected for this release is included in section 5.2. This NCR report reflects the information obtained from DDTS on September 25, 1997. These NCRs were submitted starting 042696 and ending 970908. The total number of Open NCRs is 930 and the total number of Close NCRs is 555.

5.2 FOS Non-Conformance Reports (Close Status)

Table 5-1 provides the status of NCRs which were closed for FOS Release B version 2.00.00. To obtain a detailed description of the Open NCRs, the DDTS system can be accessed from the following WEB page:

http://newsroom.sit/ddts/ddts.html

Table 5-1. FOS Closed NCR Summary

Subsystem -------- Severity	ANA	CMD	CMS	DMS	Total by Severity
1	7	9	7	9	32
2	5	10	25	18	58
3	5	2	14	14	35
Total by Subsystem	17	21	46	41	
	FUI	**PAS**	**RCM**	**RMS**	
1	26	4	3	2	35
2	111	38	2	9	160
3	61	53	5	11	130
Total by Subsystem	196	95	10	22	
	TLM	**FOS**[1]	**INT**[2]		
1	4	3	0		7
2	20	26	2		48
3	3	17	30		50
Total by Subsystem	27	46	32		

[1] FOS- Common Software (not a subsystem)

[2] INT - Integration Issues (not a subsystem)

5.3 FOS Non-Conformance Reports (Open Status)

Table 5-2 provides the status for Open NCR for FOS Release B version 2.00.00. To obtain a detailed description of the Open NCRs, the DDTS system can be accessed from the following WEB page:

http://newsroom.sit/ddts/ddts.html

Table 5-2. FOS Open NCR Summary

Subsystem -------- Severity	ANA	CMD	CMS	DMS	Total by Severity
1	7	6	9	11	33
2	31	14	44	64	153
3	28	12	9	45	94
Total by Subsystem	66	32	62	120	

	FUI	PAS	RCM	RMS	
1	9	2	1	0	12
2	174	47	7	9	237
3	218	36	3	6	263
Total by Subsystem	401	85	11	15	

	TLM	[3]FOS	[4]INT	[5]Not Assigned	
1	1	1	18	1	21
2	16	15	20	2	53
3	5	13	46	0	64
Total by Subsystem	22	29	84	3	

[3] FOS- Common Software (not a subsystem)

[4] INT - Integration Issues (not a subsystem)

[5] Not Assigned - NCR has not been assigned to a subsystem

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Appendix A. Build Instructions

This appendix describes the necessary build procedures which will be used for installing the FOS custom software released by the Configuration Management Organization (CMO) at the EOC. The system build takes place at the ECS development facility (EDF) utilizing the ClearCase CM tool. Configuration management of the source files used to build executables is maintained at the EDF. Executables produced as a result of the build process are delivered to the EOC. Installation of the executables and supporting data/configuration files are discussed in Appendix B.

A.1 Build Process

The FOS custom software build process is performed in order to generate a new set of executables. These files are subsequently loaded into specific workstations and file servers in order to meet the functional requirements of the FOS program.

The build process inputs consist of the following:

1. ClearCase views for each sub-system
2. The correct file versions dictated by the views' configuration specification
3. The pertinent NCRs that were addressed by the build

Scripts are invoked in order to perform the builds. There are two ways of actually doing this. One is by using an enhanced version of ClearCase's Graphical User Interface (GUI). The other is by keying in commands and executing them in a Command Line Interface (CLI). The GUI performs the same commands as the CLI, however the GUI executes the scripts by pointing and clicking a mouse, rather than keying in all of the detail UNIX and Cleartool commands.

The FOS custom software is partitioned into ten (10) areas. The first partition is known as FOSCOMMON, and is comprised of common code that is referenced by the remaining nine subsystems. The nine subsystems are:

- Analysis Subsystem (ANA)
- Command Subsystem(CMD)
- Command Management Subsystem (CMS)
- Data Management Subsystem (DMS)
- FOS User Interface Subsystem (FUI)
- Planning and Scheduling Subsystem (PAS)
- Real-Time Contact Management Subsystem (RCM)
- Resource Management Subsystem (RMS)
- Telemetry Subsystem (TLM)

FOSCOMMON is built *first*. DMS is built *last*. Other than these two constraints, the build order is arbitrary. Each subsystem is built by performing the following five steps:

- Set the view
- Set the path to the subsystem
- Specify the target platform (Sun or DEC)
- Source the .buildrc file
- Enter `Clearmake -C GNU -V`

The CLI interface commands are located in the /scripts/ area. The xclearcase GUI enhanced menu, Configuration Management/Change Control (CM/CC), performs all of the housekeeping for building FOS custom software.

A.2 GUI Build Process

The GUI build process is described below:

1. Ensure that the cm-cc.grp menu file resides in /home/$USER/grp path
2. Run “xclearcase” from a licensed node

   voyager{user}6: xclearcase &

   Using the menu, select the view needed for building FOSCOMMON, expand the menu to fill the monitor by clicking the larger upper right corner button. Ensure that the subsystem make.targets file has the target platform set.
3. Click on “CM/CC”
4. Click on “Build FOS S/W”
5. Click on “Foscommon”
6. Display the transcripts window to provide visibility to the FOSCOMMON build.

The FOSCOMMON build is complete when the build-foscommon script finishes. For each of the remaining nine subsystems, perform the following steps:

7. Using the menu, select the view needed for building the next subsystem
8. Ensure that the subsystem make.targets file has the target platform set
9. Click on “CM/CC”
10. Click on “Build FOS S/W”
11. Click on the next subsystem
12. Display the transcripts window to provide visibility to the subsystem build. The FOSCOMMON build is complete when the build-subsystem script finishes

A record of the build is saved into a logfile, named /home/$USER/logfile. This file can be saved and printed to record the build process for Quality Assurance purposes.

A.3 CLI Build Process

The CLI build process is described below:

1. Build FOSCOMMON:

   Enter the command: `cleartool setview {appropriate view tag}`

2. Set the correct path for FOSCOMMON: `cd /ecs/formal/fos/foscommon2`
3. Ensure that the subsystem make.targets file has the target platform set. Enter the command: `source .buildrc`
4. Enter the command: `Clearmake -C GNU -V`

FOSCOMMON build is complete when the Clearmake finishes. For the remaining nine subsystems, perform the following steps:

A.3.1 Build ANA

1. Enter the command:

   ```
   cleartool setview {appropriate view tag}
   ```

2. Set the correct path for ANA: `cd /ecs/formal/fos/ana2`
3. Ensure that the subsystem make.targets file has the target platform set
4. Enter the command: `source .buildrc`
5. Enter the command: `Clearmake -C GNU -V`

ANA build is complete when the Clearmake finishes

A.3.2 Build CMD

1. Enter the command:

   ```
   cleartool setview {appropriate view tag}
   ```

2. Set the correct path for CMD: `cd /ecs/formal/fos/cmd2`
3. Ensure that the subsystem make.targets file has the target platform set
4. Enter the command: `source .buildrc`
5. Enter the command: `Clearmake -C GNU -V`

CMD build is complete when the Clearmake finishes

A.3.3 Build CMS

1. Enter the command:

   ```
   cleartool setview {appropriate view tag}
   ```

2. Set the correct path for CMS: `cd /ecs/formal/fos/cms`
3. Ensure that the subsystem make.targets file has the target platform set
4. Enter the command: `source .buildrc`
5. Enter the command: `Clearmake -C GNU -V`

CMS build is complete when the Clearmake finishes

A.3.4 Build FUI

1. Enter the command:

   ```
   cleartool setview {appropriate view tag}
   ```

2. Set the correct path for FUI: `cd /ecs/formal/fos/fui3`
3. Ensure that the subsystem make.targets file has the target platform set
4. Enter the command: `source .buildrc`
5. Enter the command: `Clearmake -C GNU -V`

FUI build is complete when the Clearmake finishes

A.3.5 Build PAS

1. Enter the command:

   ```
   cleartool setview {appropriate view tag}
   ```

2. Set the correct path for PAS: `cd /ecs/formal/fos/pas`
3. Ensure that the subsystem make.targets file has the target platform set
4. Enter the command: `source .buildrc`
5. Enter the command: `Clearmake -C GNU -V`

PAS build is complete when the Clearmake finishes

A.3.6 Build RCM

1. Enter the command:

   ```
   cleartool setview {appropriate view tag}
   ```

2. Set the correct path for RCM: `cd /ecs/formal/fos/rcm3`

3. Ensure that the subsystem make.targets file has the target platform set
4. Enter the command: `source .buildrc`
5. Enter the command: `Clearmake -C GNU -V`

RCM build is complete when the Clearmake finishes

A.3.7 Build RMS

1. Enter the command:

   ```
   cleartool setview {appropriate view tag}
   ```

2. Set the correct path for RMS: `cd /ecs/formal/fos/rms2`
3. Ensure that the subsystem make.targets file has the target platform set
4. Enter the command: `source .buildrc`
5. Enter the command: `Clearmake -C GNU -V`

RMS build is complete when the Clearmake finishes

A.3.8 Build TLM

1. Enter the command:

   ```
   cleartool setview {appropriate view tag}
   ```

2. Set the correct path for TLM: `cd /ecs/formal/fos/tlm2`
3. Ensure that the subsystem make.targets file has the target platform set
4. Enter the command: `source .buildrc`
5. Enter the command: `Clearmake -C GNU -V`

TLM build is complete when the Clearmake finishes

A.3.9 Build DMS

1. Enter the command:

   ```
   cleartool setview {appropriate view tag}
   ```

2. Set the correct path for DMS: `cd /ecs/formal/fos/dms4`
3. Ensure that the subsystem make.targets file has the target platform set
4. Enter the command: `source .buildrc`
5. Enter the command: `Clearmake -C GNU -V`

DMS build is complete when the Clearmake finishes

The entire Build process is complete when all the subsystems have successfully built after the FOSCOMMON. It is now possible to begin the Installation process.

Appendix B. Installation Procedure

This section outlines the installation procedure for the FOS custom software. The following procedures are performed following the successful build of the FOS system.

1. Login as foscm
2. Type “x &” to invoke the xclearcase tool
3. Select view from which system builds were performed
4. Select the CM/CC pull-down window option
5. Select target platform to install to (i.e., dec_osf_3-2)
6. Select Environment (CM Release, /cm environment)
7. Select Install S/W @ Mini-EOC
8. Select Install everything
9. Install EOC-specific files in </cm> environment

Using the above procedures, a */fos/cm/am1* directory structure is populated with all the deliverable executables and support files required to support the delivery.

Execution of the following UNIX commands results in a tape being generated for delivery to the EOC.

1. cd /net/tick/fosb/cm
2. tar cvf /net/tick/fosb/<patch_name>.tar am1
3. compress <patch_name>.tar
4. cd /net/tick/fosb
5. Insert a tape into the machine you are logged on to
6. tar cf /dev/rmt0h <patch_name>.tar

Take the delivery tape to the EOC at GSFC and perform the following functions.

1. login, as root, on the Support LAN DEC machine where the delivery tape has been inserted
2. cd /fosb/test
3. tar xf /dev/rmt0h
4. uncompress <patch_name>.Z

5. cp am1 am1P#, where # is the number of the previous patch
6. tar xvf /fosb/test/<patch_name>.tar
7. chown -R root am1
8. chgrp -R fosusers am1
9. chmod -R g+w am1
10. cd /fosb/test/am1/scripts
11. chmod-Rq-w setup
12. cd fosb/test/am1
13. chmod -Rq-w bin

Appendix C. Special Operating Instructions

The README files available with this delivery are located on the tar files "INTB_P11_DEC.exe.tar.Z" and "INTB_P11_SUN.exe.tar.Z". The README files have not been verified. However, it does contain valid and useful information concerning the installation instructions and the NCRs fixed by this delivery.

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Appendix D. User Feedback Procedures

Feedback from the Users

Collating user feedback is one of the primary goals of FOS. Collected user feedback will be provided directly to the subsequent release teams for further assessment and action. Several feedback channels will be provided for effective collection of data.

URDB

Link to URDB will be provided on the FOS WEB page which is under construction.

Bulletin board

FOS bulletin board server is located on http://newsroom.hitc.com/fos/fos.html.

Non Conformance Reports (NCR)

NCRs for FOS are submitted using the FOS NCR WEB page (URL http://newsroom.gsfc.nasa.gov/sit/ddts/ddts.html). This page provides a direct link to the EDF DDTS database which tracks the FOS NCRs. The access is allowed only to authorized ECS users. The procedure for submitting NCRs is explained in detail in the Project Instruction (PI) SD-1-014, Software Nonconformance Reporting.

Feedback to the users

Keeping the users of the system informed about the status and operational aspects of the system is also as important as collecting feedback from the users. Consistent with this approach, users will be able to get FOS data from the following channels:

Bulletin board

Information will be posted to the bulletin board at http://newsroom.hitc.com/fos/fos.html.

FOS WEB Page

FOS WEB Page (under construction) will also provide useful information including access to the FOS documentation on-line.

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